STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ORIGINAL

ANGUS S. KING, JR.
GOVERNOR

EDWARD O. SULLIVAN
COMMISSIONER

COMMENTS

September 4, 1997

FILED
OFFICE OF THE SECRETARY
97 SEP 11 PM 12: 23
REGULATORY COMMISSION

Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

RE: Application for New License
Skelton Hydro Project
FERC No. 2527

Water Quality Certification

Dear Secretary Cashell:

002

This is in response to Central Maine Power's Application for New License for the existing Skelton Hydro Project, FERC No. 2527, located on the Saco River in the Towns of Buxton, Dayton and Hollis, York County, Maine.

The Maine Department of Environmental Protection has now issued Water Quality Certification for the proposed relicensing of the Skelton Project. A copy of the Department Order granting certification (DEP #L-17483-33-F-N) is attached.

In summary, the continued operation of the Skelton Project has been certified as meeting applicable water quality standards subject to the following special conditions:

1. Except as temporarily modified by maintenance activities, inflows, flashboard failure, or emergencies beyond the applicant's control, water levels in the project impoundment shall be maintained in accordance with the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, water levels shall be maintained as follows:

   - From April 1 through June 30, no more than one foot below normal full pond evelation; and

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17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
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PORTLAND, MAINE 04103
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PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-1507

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- From July 1 through March 31, no more than 4.0 feet below normal full pond elevation.

2. Scheduled maintenance drawdowns of the Skelton impoundment shall be limited to a total drawdown of 8.5 feet for a maximum of 48 hours once every three to four years and shall occur during the period from August 15 to October 15 when water temperatures do not exceed 20 degrees Celcius.

3. Except as temporarily modified by maintenance activities, inflows, flashboard failure, or emergencies beyond the applicant's control, minimum flows shall be released from the project in accordance with the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, minimum flows shall be released as follows:

   - From April 1 through June 30, outflow approximately equal to inflow (run-of-river operation) while allowing for up to a one foot drawdown of the impoundment;

   - From July 1 through September 30, an instantaneous minimum flow of 400 cfs, to be guaranteed through impoundment drawdowns of up to 4.0 feet, or inflow if less than 400 cfs and the impoundment drawdown limit has been reached;

   - From October 1 through November 15, or for an agreed-to alternate six week period, an instantaneous minimum flow of 600 cfs or inflow, whichever is less; and

   - From November 16 through March 31, an instantaneous minimum flow of 400 cfs, to be guaranteed through impoundment drawdowns of up to 4.0 feet, or inflow if less than 400 cfs and the impoundment drawdown limit has been reached.

4. Fish passage shall be provided in accordance with the "Saco River Fish Passage Agreement." Specifically:

   - Permanent downstream fish passage facilities shall be constructed and operational within three years following issuance of a new project license;

- Permanent upstream fish passage facilities, consisting of a fish lift or other suitable design with trap and truck facilities, shall be constructed and operational with three years following issuance of a new project license; and

- The applicant shall conduct appropriate studies to determine the effectiveness of all required fish passage facilities. The Department reserves the right to require such reasonable changes in fish passage design and/or operation as are warrented by the results of the studies.

5. The applicant shall conduct a study to confirm that dissolved oxygen concentrations in the Saco River immediately below the Skelton Project are meeting applicable water quality standards as a result of the new minimum flow requirements for the project. The Department reserves the right to require such modification of project facilities and/or operations as are warrented by the results of the study.

6. The applicant shall conduct a study to confirm that the macroinvertebrate community in the Saco River immediately below the Skelton Project is meeting applicable water quality standards as a result of the new minimum flow requirements for the project. The Department reserves the right to require such modification of minimum flow requirements as are warrented by the results of the study.

7. The applicant shall install boulder clusters or equivalent structures in the river below the Skelton Dam to enhance salmon holding lies.

8. The applicant shall maintain existing recreational facilities and shall evaluate the need for, and where appropriate modify existing facilities and/or develop additional facilities, as proposed.

We recommend that the foregoing conditions be included in the Articles of any new license issued for the Bonny Eagle Project, in compliance with the provisions of Sections 401 (a) and (d) of the Clean Water Act.

By Executive Order of the Governor of the State of Maine, the terms and conditions contained in the attached water quality certification represent the State's official recommendations regarding the subject Application for New License, superceding all preliminary recommendations by individual State agencies.

We note that the 1994 "Saco River Fish Passage Agreement" has been filed with the Commission as an Offer of Settlement to resolve fish passage issues at the several dams throughout the Saco River in Maine. The agreement calls for construction of a new fish lift or other suitable fishway with trap and truck facilities at the Skelton Project. The applicable provisions of the agreement has already been incorporated by the Commission into the licenses for the downstream Cataract Project (FERC No. 2528), Bar Mills Project (FERC No. 2194) and West Buxton Project (FERC No. 2531) and the upstream Hiram Project (FERC No. 2530). Implementation of the fish passage agreement at the Skelton, Bonny Eagle and Swans Falls Projects, each of which is pending at the Commission for a new license or exemption, is essential to achieve the State's goal of restoring anadromous Atlantic salmon, American shad and river herring to the Saco River and to meet State water quality standards for aquatic habitat and fishing. We urge the Commission to approve the fish passage agreement and incorporate the provisions of the agreement in the new license for the Skelton Project.

We also note that the 1997 "Instream Flow Agreement for Hydroelectric Projects on the Saco River" has been filed with the Commission as an Offer of Settlement to resolve minimum flow and pond level issues at the several dams throughout the Saco River in Maine. The agreement includes seasonally-varied minimum flow and water level requirements for the Skelton Project. The applicable provisions of the agreement are already effectively incorporated in the current licenses for the downstream Cataract Project (FERC No. 2528), Bar Mills Project (FERC No. 2194), and West Buxton Project (FERC No. 2531). Implementation of the instream flow agreement at the Skelton, Bonny Eagle and Swans Falls Projects, each of which is pending at the Commission for a new license or exemption, and at the licensed Hiram Project, is essential to achieve the State's fisheries management and restoration goals for the Saco River and to maintain the generation of cost-effective electricity from indigenous hydropower sources. We urge the Commission to approve the instream flow agreement and incorporate the provisions of the agreement in the new license for the Skelton Project.

Finally, we note that, in the Final Environmental Impact Statement for Saco River Projects (August 1996), the FERC staff recommended that CMP conduct two years of sampling to evaluate the response of benthic macroinvertebrates and dissolved oxygen levels below the Skelton Project to the new minimum flow releases from the project (see FEIS, page 5-27). In the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," CMP agreed to conduct follow-up studies of the aquatic community and dissolved oxygen below the Skelton Project as required by DEP in its water quality certification for the project. In accordance with the attached certification, the required macroinvertebrate sampling and

dissolved oxygen monitoring must be done in accordance with study plans approved by DEP. We see no need for separate macroinvertebrate or dissolved oxygen studies in order to comply with DEP and FERC requirements, and we recommend that the new license for the Skelton Project simply require macroinvertebrate sampling and dissolved oxygen monitoring in accordance with the study plans approved by DEP.

Please direct any questions regarding these comments to Dana Murch of the Department's staff at 207-287-3901.

Sincerely,

Martha Kirkpatrick, Director
Bureau of Land & Water Quality

Attachment
\skelton5.doc

cc: Frank Dunlap, CMP
Director, OHL-DL&C, FERC
Rich McGuire, OHL-DL&C, FERC
Quentin Lawson, OGC, FERC
Gordon Russell, USF&WS
Ralph Abele, US EPA
Ed Laing, SRSC
FERC Review Coordinating Committee

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

CENTRAL MAINE POWER COMPANY	)	MAINE WATER QUALITY PROGRAM;
BUXTON, DAYTON, AND HOLLIS	)	FEDERAL CLEAN WATER ACT
YORK COUNTY, MAINE	)	
SKELTON HYDRO PROJECT	)	
#L-17483-33-F-N (APPROVAL)	)	WATER QUALITY CERTIFICATION

Pursuant to the provisions of 38 M.R.S.A. Section 464 et seq., and Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act), the Department of Environmental Protection has considered the application of CENTRAL MAINE POWER COMPANY with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

a. Application: The applicant proposes the continued operation of the existing Skelton Hydroelectric Project, located at River Mile 17 on the Saco River in the Towns of Buxton, Dayton, and Hollis, York County, Maine (See Exhibit 1).

b. Existing Project Features: The existing project was constructed in 1947-49 and consists of a dam with an integral intake and powerhouse, an impoundment, a fishway, a tailrace, and appurtenant structures (See Exhibits 2 and 3).

i. The dam is a 1,695-foot-long non-overflow earth and concrete gravity dam with a maximum height of about 100 feet. The dam consists of a 1,200-foot-long earth dike, two gate sections (each with four Taintor gates), an intake/powerhouse section, and a fishway/sluiceway section. The downstream side of the dike is protected by a 763-foot-long concrete retaining wall that runs parallel to the river at the east end of the dike.

ii. The intake section serves as the powerhouse substructure. The powerhouse contains two equally-sized vertical shaft turbine-generator units. The project has a nameplace capacity of 16.8 MW at a gross head of 76 feet. Total hydraulic capacity of the turbines is 3,800 cfs.

iii. To the east of the powerhouse is a fishway and sluice section. The existing pool and weir fishway was constructed in 1947-49.

iv. The dam forms an impoundment that is approximately 2.8 miles long and has a surface area of 488 acres at a normal full pond elevation of 127.5 feet (USGS). The applicant estimates the usable storage within a 2.5 foot operating range from full pond to be approximately 1720 acre-feet.

V. The tailrace is an excavated channel in the main river bed. There is no river bypass section.

c. Existing Project Operation: There are a total of seven hydroelectric projects located on the main stem Saco River. Six of these projects are owned by CMP. From upstream to downstream those projects are: Hiram (FERC 2530), Bonny Eagle (FERC 2529), West Buxton (FERC 2531), Bar Mills (FERC 2194), Skelton (FERC 2527), and Cataract (FERC 2528). The seventh project, located above Hiram, is the Swans Falls Project (FERC 11365), which is owned by others.

The operation of the Skelton Project is controlled based on operating efficiency, system load, river flow and impoundment storage capacity. Inflows are largely controlled by the Bonny Eagle Project, located about 10 miles upstream.

The Bonny Eagle Project is an intermittent peaking facility which regulates flows to the lower river by storing and releasing inflow to the project on a daily basis. During normal peaking operations, the project releases flows depending on electrical demand, available storage, and river flow. The impoundment is drawn down during the day and refilled overnight. When the impoundment is refilling, only leakage flows (about 50 cfs) are passed. Peaking operations can result in the impoundment being drawn down by up to four and a half feet depending on inflow and ability to refill the impoundment overnight.

During normal peaking operations, the Skelton Project is set to generate at an optimal operating flow of 3,600 cfs. The Skelton impoundment is drawn down during the day and refilled overnight, along with the Bonny Eagle Project. When the impoundment is refilling, only leakage flows (about 50 cfs) are passed, with an additional seasonal flow of about 50 cfs passed through the fishway. Normal peaking operations result in the Skelton impoundment being drawn down by an average of about two and a half feet. The extent of the drawdown depends on inflow and ability to refill the impoundment overnight. Outflow is approximately equal to inflow on a 24-hour basis.

During high flow periods, both generator units may be run 24 hours a day, with flows in excess of the maximum project capacity of 3,800 cfs being passed through the dam gates.

d. Summary of Proposal: The applicant does not propose any changes in the generating or hydraulic capacities of the existing project. However, the applicant does propose to modify project facilities and operation in accordance with several measures designed for the protection or enhancement of, or mitigation of impacts on, public resources. These measures include:

- Providing fish passage at the project in accordance with the provisions of the "Saco River Fish Passage Agreement," dated May 24, 1994;

- Providing flow releases and maintaining impoundment levels at the project in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," dated April 30, 1997; and

- Providing or maintaining various recreational and public access facilities.

e. Fish Passage Agreement: In 1993, the applicant completed construction and began operation of permanent upstream and downstream fish passage facilities at the East and West Channel Dams of the Cataract Hydro Project, located at head-of-tide on the Saco River. These facilities include a state-of-the-art fish lift and trapping and sorting facility at the East Channel Dam.

On June 28, 1994, the applicant entered into an agreement with state and federal fisheries agencies and other parties interested in restoring viable, self-sustaining runs of anadromous fish populations (Atlantic salmon, American shad and river herring) to the Saco River. The long term goal of the "Saco River Fish Passage Agreement" is to provide passage for salmon above the Swans Falls Project. For shad and river herring, the goal of the Agreement is to provide passage on the main stem only to above Bonny Eagle, and to tributaries below the Hiram Project.

The Agreement calls for construction of a lock system to provide fish passage at the Springs and Bradbury Dams (which are part of the Cataract Project), and construction of a new fish lift to replace the existing pool and weir fishway at the Skelton Dam. The applicant constructed the Springs and Bradbury Dams lock system in 1996. In addition, the Agreement includes a long-range plan to determine the need for, design of, and schedule for implementing fish passage measures at the Bar Mills, West Buxton, Bonny Eagle, Hiram, and Swans Falls Projects. Such determinations will result from periodic assessments as outlined in the Agreement.

f. Instream Flow Agreement: On June 20, 1997, the applicant entered into an agreement with DEP, state and federal fisheries agencies, and other interested parties governing flow and water level management at all dams on the main stem Saco River in Maine. The "Instream Flow Agreement for Hydroelectric Projects on the Saco River" achieves and balances the following objectives and considerations:

- To improve the habitat for Atlantic salmon, American shad and river herring sufficiently to allow self-sustaining populations, and to improve habitat for resident fish and aquatic communities, focusing on the Hiram to Bonny Eagle reach which provides the most valuable spawning and rearing habitat for Atlantic salmon in the Saco River downstream of Swans Falls;

- To provide for and improve a zone of passage for anadromous fish and spawning habitat below the Skelton Dam;

- To provide for spawning and rearing of clupeids (American shad and river herring) below the Skelton Dam;

- To contribute to restoration of the natural hydrology and riverine ecosystems by reducing the difference between the minimum and maximum flows;
- To maintain and improve the habitat for resident aquatic life in the West Buxton to Bar Mills reach;
- To meet the State of Maine's minimum water quality standards below the Bonny Eagle and Skelton Projects; and
- To ensure continued hydro power generation in the Saco River basin in a cost-effective manner for the project owners, and in a manner which provides for flexibility in hydro power operations to meet changing peak and off-peak demands.

Under the terms of the flow agreement, the applicant will modify the existing operation of the Hiram, Bonny Eagle, and Skelton Projects. With respect to the Skelton Project, the applicant agrees to provide run-of-river flows from April 1 through June 30, a guaranteed minimum flow release of 400 cfs from July 1 through September 30 and again from November 16 through March 30, and a minimum flow of 600 cfs or inflow, if less, from October 1 through November 15. Under the agreement, the drawdown of the Skelton impoundment will be increased during normal peaking operations to a maximum of four feet in order to provide the required flows.

2. JURISDICTION

The proposed continued operation of the project qualifies as an "activity...which may result in (a) discharge into the navigable water (of the United States)" under the Clean Water Act (CWA), 33 USC 1251 et seq. Section 401 of the CWA requires that any applicant for a federal license or permit to conduct such an activity obtain a certification that the activity will comply with applicable State water quality standards.

The licensee has filed an Application for New License for Major Project Greater than 5 MW to continue to operate the Skelton Project, FERC No. 2527. This application is currently pending before the Federal Energy Regulatory Commission.

The Department of Environmental Protection has been designated by the Governor of the State as the certifying agency for issuance of Section 401 Water Quality Certification for all activities in the state not subject to Land Use Regulation Commission permitting and review. The Skelton Project is located in the organized municipalities of Buxton, Dayton and Hollis, which are not subject to LURC's regulatory jurisdiction.

3. APPLICABLE WATER QUALITY STANDARDS

a. Classification: The receiving waters of the Saco River that are or may be affected by the Skelton Project are currently classified as follows:

Skelton impoundment - Class GPA. 38 M.R.S.A. §465-A.

From the Skelton Dam to its confluence with the impoundment formed by the Cataract Project Dams - Class A. 38 M.R.S.A §467(12)(A)(6-D).

b. Designated Uses: Class A waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as naturally occurs. 38 M.R.S.A. §465(2)(A).

Class GPA waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; recreation in and on the water; fishing, industrial process and cooling water supply; hydroelectric power generation and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as natural. 38 M.R.S.A. § 465-A(1)(A).

c. Numeric Standards: The dissolved oxygen content of Class A waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher. 38 M.R.S.A. §465(2)(B).

Class GPA waters do not have numeric standards for dissolved oxygen.

d. Narrative Standards: Discharges to Class A waters shall be permitted only if the discharged effluent will be equal to or better than the existing water quality of the receiving waters. 38 M.R.S.A. §465(2)(C).

The habitat characteristics and aquatic life criteria of Class A are deemed to be met in the waters immediately downstream of and measureably affected by the Skelton Project, provided that the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community. 38 M.R.S.A. §464(11).

Class GPA waters shall be described by their trophic state based on measurements of the chlorophyll "a" content, Secchi disk transparency, total phosphorous content and other appropriate criteria. Class GPA waters shall have a stable or decreasing trophic state, subject only to natural fluctuations, and shall be free of culturally induced algal blooms which impair their use and enjoyment. 38 M.R.S.A. § 465-A(1)(B).

The habitat characteristics and aquatic life criteria of Class GPA are deemed to be met in an existing impoundment classified GPA if the impounded waters achieve the aquatic life criteria of Class C (support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community), provided that any reasonable changes are implemented that do not significantly affect existing energy generation capability and would result in improvement in the habitat and aquatic life of the

impounded waters, and further provided that, where the actual quality of the impounded waters attains any more stringent habitat characteristics or aquatic life criteria than required under the assigned classification, the existing water quality must be maintained and protected. 38 M.R.S.A. §464(9).

e. Antidegradation: The Department may only approve water quality certification if the standards of classification of the waterbody and the requirements of the State's Antidegradation policy will be met. The Department may approve water quality certification for a project affecting a waterbody in which the standards of classification are not met if the project does not cause or contribute to the failure of the waterbody to meet the standards of classification. 38 M.R.S.A. §464(4)(F).

4. LAKE TROPHIC STATE

a. Existing Conditions: During the summers of 1987 and 1991, the applicant conducted water quality samping in the Skelton impoundment. Sampling was conducted in accordance with the Department's "Lake Trophic State Sampling Protocol" (MDEP, 1986). The 1991 sampling revealed that the impoundment becomes thermally stratified during the summer months. Total phosphorous and chlorophyll-a concentrations that were measured were indicative of a stable or decreasing trophic level.

b. Applicant's Proposals: The applicant is not proposing any changes to the existing facilities or mode of operation that would adversely impact water quality in the Skelton impoundment.

c. Discussion: The applicant's proposals appear to be adequate to ensure that the trophic state of the Skelton impoundment remains stable.

5. DISSOLVED OXYGEN

a. Existing Conditions: The water quality of the Saco River can be characterized as good. Approximately 11 miles downstream of the project, water is drawn from the Saco River by the Saco-Biddeford Water District and the Kennebunk/Kennebunkport/Wells Water District for residential and industrial uses.

During the period 1975-1978, the Department of Environmental Protection conducted water quality monitoring in the Saco and Biddeford area. During that period, dissolved oxygen concentrations and saturation levels remained high, with only two instances of non-attainment of Class A dissolved oxygen standards.

In 1987 and 1991 the applicant conducted water quality studies in the project waters. Data were collected in accordance with the Department's "River Sampling Protocol" in both the impoundment and the tailrace of the project. Dissolved oxygen levels ranged from a low of 5.7 ppm to a high of 10.4 ppm. DO levels in the tailrace showed noticable increases when the station was releasing generating flows. Violations of Class A DO standards have been monitored on

some occasions when the project was not generating and only leakage flow (about 50 cfs) was being passed from the dam.

b. Applicant's Proposals: To meet and/or maintain dissolved oxygen standards in the downstream areas of the Saco River affected by the project, the applicant proposes to provide instream flow releases and maintain impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," dated April 30, 1997. Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; a guaranteed minimum flow of 400 cfs from July 1 through September 30 and again from November 16 through March 30, and a minimum flow of 600 cfs or inflow, whichever is less, from October 1 through November 15, with impoundment drawdowns increased to a maximum of 4 feet during normal peaking operations.

c. Discussion: The applicant's proposals appear to be adequate to meet dissolved oxygen standards in all waters affected by the project. A follow-up study should be conducted, however, to document attainment of Class A DO standards during the summer period.

6. FISH RESOURCES

a. Existing Conditions: The Saco River supports a variety of resident warmwater and coldwater fish species including brook trout, brown trout and smallmouth bass. Several anadromous species are also present in the Saco River below the Skelton Project, including Atlantic salmon, American shad, and alewife. These fish are passed through or trapped and trucked from the fishways at the downstream Cataract Project.

The Skelton Project has an existing and functional pool and weir fishway which is located on the east side of the powerhouse. This fishway is capable of passing Atlantic salmon from the tailrace of the dam into the Skelton impoundment.

The 4,000 foot-long free-flowing river reach below the Skelton Dam represents less than 1% of the total Atlantic salmon spawning and production habitat in the drainage. However, the Saco River from the Skelton Dam to the downstream Cataract Project represents 23% and 7% of the total available habitat in the river for American shad and alewife, respectively.

In response to requests made by state and federal fisheries resource agencies the applicant conducted several studies aimed at assessing project impacts on fish and fish habitat in the Skelton impoundment and the stretch of river below Skelton dam.

In 1988 the applicant conducted an Instream Flow Incremental Methodology Study (IFIM) and a flow ramping study in the 4,000 foot-long free-flowing stretch of river below the Skelton Dam. The study team, comprised of members of the United States Fish and Wildlife Service (USF&WS), Atlantic Sea Run Salmon Commission (ASRSC), Maine Department of Marine Resources (DMR), Maine State Planning Office, CMP, and Acres International Corporation, agreed to look at flow

impacts on weighted useable habitat (WUA) for: adult brook trout; adult brown trout; adult rainbow trout; American shad inmigration, spawning, and larval/juvenile rearing and outmigration; alwife outmigration; and Atlantic salmon inmigration and fishing. Habitat values were simulated at flows from 100 cfs to the maximum capacity of the powerhouse (3,800 cfs). The study revealed that habitat for brook trout, brown trout, and rainbow trout is maximized at flows of 200 cfs, 300 cfs, and 900 cfs, respectively. American shad, alewife and Atlantic salmon habitat all increased with flows up to 3,800 cfs.

The flow ramping study revealed that reductions in flows from 3,600 cfs (optimum generating flow) to leakage flow (about 50 cfs) results in some fish stranding in pools downstream from the project. Stranding could be reduced by modifying project operation to limit the creation of isolated pools as flows decrease, or by physical alteration to the pools to provide a means of escape for any trapped fish.

The applicant also conducted a "zone of passage" study below Skelton, West Buxton and Bar Mills. The applicant contends that the Skelton Project cannot sustain flows necessary to optimize overall WUA and that the results of the IFIM's conducted provided conflicting results for different species. For these reasons, the applicant focused on the ability of the several projects to provide a "zone of passage" for anadromous fish.

Finally, the applicant conducted a habitat enhancement study below the Skelton Dam. The study revealed that enhanced habitat could be provided in the gravel area below the bedrock tailrace by placing boulder clusters along the west side of the river. These clusters would provide additional holding lies for adult salmon, would increase habitat for resident adult trout, and would create angling opportunities by attracting and holding fish in accessible fishing areas.

b. Existing Management Plans: In 1987, the Maine Department of Inland Fisheries and Wildlife (DIF&W), the Maine Department of Marine Resources (DMR), the Maine Atlantic Sea Run Salmon Commission (ASRSC), and the United States Fish and Wildlife Service (USF&WS) released the document Saco River Strategic Plan for Fisheries Management. This document outlines the management objectives for resident, catadromous, and anadromous species.

c. Applicant's Proposals: To protect and enhance fishery resources, the applicant proposes the following measures:

   i. Providing fish passage at the Skelton Project in accordance with the provisions of the "Saco River Fish Passage Agreement." Specifically, the applicant proposes to provide full, permanent upstream and downstream fish passage facilities at the project for salmon, shad and alewife. These facilities will be operational by May 1, 1998, or within three years of the issuance of a new FERC license for the project, whichever is later. A fish lift with trap and truck facilities is the current favored design to replace the outdated and inadequate pool and weir fishway at the Skelton Project. Once the new

facilities are operational and fish are present at the Skelton Dam in sufficient numbers, the trapping and trucking of salmon, shad and alewife is expected to move to the Skelton Project from the Cataract East Channel Dam. The trap and truck program will be paid for by the applicant, with decisions on the number of the fish to be trucked and the destinations of these fish to be made by the appropriate state and federal fisheries agencies.

ii. Providing instream flow releases and maintaining impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; a guaranteed minimum flow of 400 cfs from July 1 through September 30 and again from November 16 through March 30, and a minimum flow of 600 cfs or inflow, whichever is less, from October 1 through November 15, with impoundment drawdowns increased to a maximum of 4 feet during normal peaking operations.

iii. Providing boulder clusters or equivalent structures in the river below Skelton Dam to enhance salmonid holding lies.

d. Discussion: Given the significant overall benefits of the fish passage and instream flow agreements to fish habitat and fish restoration throughout the Saco River system, the applicant's proposals appear to be adequate to achieve and maintain the suitability of all waters affected by the protect as habitat for fish.

7. OTHER AQUATIC LIFE RESOURCES--NORMAL OPERATIONS

a. Existing Resources: In the summer of 1991 the applicant conducted an aquatic life assessment of the macroinvertebrate community in the waters below the Skelton Project to determine compliance with Class A aquatic life standards. The study plan utilized the Department's standard protocol for assessing macroinvertebrate communities. The results of the 1991 study indicated the Saco River below the Skelton Project was not maintaining the structure and function of the biological community and was therefore not in attainment of applicable aquatic life standards.

A follow-up study was conducted in 1992 using a modification of EPA's Rapid Bioassessment Protocol I. Results of the 1992 study indicated the macroinvertebrate community still was not meeting applicable standards for aquatic life. The study concluded that the aquatic community below Skelton was not be meeting standards due to the impact of leakage flows during periods of non-generation and the excessive range between leakage flows and generating flows.

In addition, the quantity of habitat available for aquatic life below the Skelton Dam is directly affected by flow releases during periods of non-generation.

b. Applicant's Proposals: To meet and/or maintain aquatic life standards in the areas of the Saco River affected by the project, the

applicant proposes to provide instream flow releases and maintain impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; a guaranteed minimum flow of 400 cfs from July 1 through September 30 and again from November 16 through March 30, and a minimum flow of 600 cfs or inflow, whichever is less, from October 1 through November 15, with impoundment drawdowns increased to a maximum of 4 feet during normal peaking operations.

c. Discussion: Given the significant overall benefits of the instream flow agreement to aquatic habitat throughout the Saco River system, the applicant's proposals appear to be adequate to achieve and maintain the suitability of all waters affected by the protect as habitat for aquatic life other than fish. A follow-up study should be conducted, however, to document attainment of aquatic life standards, in accordance with established biological assessment criteria.

8. OTHER AQUATIC LIFE RESOURCES--MAINTENANCE DRAWDOWNS

a. Historic Drawdowns: The Skelton impoundment has been periodically drawn down in excess of normal operational drawdowns to allow maintenance to occur "in the dry" at the Skelton Project and the downstream Cataract Project. Historically, major maintenance drawdowns in the range of 15 to 20 feet below normal full pond have occurred once or twice a year. In addition, minor maintenance drawdowns ranging from 5 to 10 feet below full pond have occurred up to several times a year since 1983. These drawdowns can have a significant adverse impact on the resident aquatic community in the impoundment due to the de-watering of the littoral zone habitat.

b. Instream Flow Agreement: Under the terms of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," the applicant and the Department agreed to discuss the timing and extent of scheduled maintenance drawdowns of the Skelton impoundment in the water quality certification process.

c. Cataract Project Maintenance: The Department has previously approved a turbine intake maintenance debris removal plan for the Cataract Project that calls for annual debris removal "in the wet" using divers and, when necessary, a crane and clamshell working from the dam or riverbank. The approved plan also calls for the periodic drawdown of the Cataract impoundment and the removal "in the dry" of accumulated sediments blocking the turbine intakes that cannot otherwise be safely or successfully removed. This maintenance drawdown is limited to the period from August 15 to October 15 when water temperatures do not exceed 20 degrees Celcius (see DEP Order #L-16084-33-C-M dated March 15, 1993).

d. Applicant's Proposal: The applicant now proposes to limit future scheduled maintenance drawdowns of the Skelton impoundment to a total drawdown of 8.5 feet for a maximum of 48 hours once every three to four years. This drawdown will provide sufficient storage capacity in the Skelton impoundment to allow flows into the Cataract Project

to be controlled so that the required debris removal can safely take place "in the dry" without resorting to costly and environmentally intrusive cofferdams. This drawdown will also allow some periodic maintenance of the Skelton Dam to be performed "in the dry."

e. Discussion: . The applicant's proposal appears to be adequate to maintain the suitability of the impoundment as habitat for aquatic life provided that the periodic maintenance drawdown of the Skelton impoundment is further limited to the period from August 15 to October 15 when water temperatures do not exceed 20 degrees Celcius.

9. FISHING AND RECREATION IN AND ON THE WATER

a. Existing Facilities and Use: Existing recreational use at the project consists of canoeing, picnicking, swimming, bank and boat fishing, hiking, camping, and hunting. Current recreational facilities at the Skelton Project are shown on Exhibit 4. These facilities currently include: a hard-surface impoundment boat launch with parking; two downstream carry-in boat access sites, with parking; an Appalachian Mountain Club day-use recreational area; two unimproved swimming and picnicking sites; and a new canoe portage trail. A number of these facilities are owned by the applicant and have been upgraded in recent years.

In 1992, the applicant conducted investigations regarding recreational access at the Skelton Project. The report concluded that at current public use levels there was no need to improve: current boating access to the impoundment; the exising canoe portage trail and parking area; the group campsites on Skelton Island; water access campsites at the confluence of the Little Ossippee and Saco Rivers. The report did conclude that the exising picnic area at the powerhouse should be relocated due to safety concerns.

b. Applicant's Proposals: In 1989, the applicant developed a Comprehensive Recreational Facilities Plan which was designed to meet current and anticipated public recreational needs at CMP-owned hydro projects. Based on this Plan, and after consultations with resource agencies and the affected municipalities, the applicant proposes the following measures to protect or enhance recreational access and use in the project area:

- Maintaining the existing applicant-owned impoundment boat launch and parking facility;
- Maintaining the existing applicant-owned downstream carry-in boat access and parking site;
- Maintaining the existing canoe portage trail;
- Monitoring the need for a dusk to dawn gate to restrict overnight access to the project;
- Installing an interpretive sign at the project powerhouse;
- Monitoring the need for tailrace fishing facilities (e.g., sanitary facilities, etc.) as anadromous fish restoration progresses; and

- Investigating the need/potential for the development of boat access primitive camp sites in the impoundment.

c. Discussion: The applicant's proposals to enhance recreational use and access at the project appears to be adequate to achieve and maintain suitable use of the waters affected by the project for fishing and recreation in and on the water.

10. WETLANDS AND WILDLIFE RESOURCES

a. Existing Resources: The project impoundment and adjacent shoreline support a diversity of wildlife species typical of a rural south-central Maine habitat area, including a variety of song birds, waterfowl, small and large mammals, and furbearers. There are no known threatened or endangered species present within the project area, except for an occasional migrant bald eagle.

During 1991, the applicant conducted a survey on the Skelton impoundment to determine use by loons. No loons were observed during the survey. The applicant concluded that the riverine nature of the impoundment and the lack of bays and coves accounted for the absence of loons.

Only 21.6 acres of the vegetative cover within the project boundaries are classified as wetlands.

No significant project impacts on wetlands or wildlife resources have been identified.

b. Applicant's Proposals: To protect existing wetlands and wildlife resources, the applicant proposes to provide instream flow releases and maintain impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; a guaranteed minimum flow of 400 cfs from July 1 through September 30 and again from November 16 through March 30, and a minimum flow of 600 cfs or inflow, whichever is less, from October 1 through November 15, with impoundment drawdowns increased to 4 feet or less during normal peaking operations.

c. Discussion: The MDIF&W has reviewed the application and the applicant's proposals to continue to operate the project in a peaking mode which will result in daily impoundment fluctuations of up to 4 feet and has commented that the fluctuations will not result in any significant impacts on wetlands or wildlife resources.

The applicant's proposals appear to be adequate to protect and maintain wetlands and wildlife resources in the project area.

11. HYDROELECTRIC POWER GENERATION

a. Existing Energy Generation: The Skelton Project generates an average of 107,381,000 kilowatt-hours (kWh) of electricity annually. This is the equivalent to the energy that would be produced by

burning 178,968 barrels of oil or 49,760 tons of coal each year. Power from the Skelton Project is fed to the applicant's transmission and distribution system for use by its residential, commercial, and industrial users.

b. Existing Energy Policies/Plans: The State of Maine has developed a comprehensive energy plan (Final Report of the Commission on Comprehensive Energy Planning, May 1992) with the goal of meeting the State's energy needs with reliable energy supplies at the lowest possible cost, while ensuring that energy production and use are consistent with a healthy environment and a vibrant economy. Specifically, the Plan establishes the following targets for Maine's energy future:

- Reduce the State's level of dependence on oil from 50% to at least match the national average of 43% by the year 2000, with further reductions to at least the 30% level by 2010;
- Increase the percentage of renewable energy resources in the State's primary energy mix from 30% to 40% by the year 2000, and to at least 50% by 2010;
- Increase statewide energy efficiency relative to 1990 levels by 25% by the year 2000 and by at least 50% by 2010; and
- Work to stabilize long-term energy prices, in balance with Maine's other energy-related goals, with a specific emphasis on enhancing Maine's competitive position relative to New England and the U.S.

With respect to renewable energy, the Plan recommends that Maine actively encourage the development of wind and solar energy resources and support the continued utilization and further development, where appropriate, of the State's renewable, indigenous hydro and biomass energy resources.

c. Applicant's Proposal: The applicant's proposal to increase minimum flow releases from the Skelton Project would result in a loss of about 605,000 KWH or 0.6% of average annual generation.

d. Discussion: As proposed, the Skelton Project will continue to provide cost-effective indigenous and renewable electricity.

BASED on the above Findings of Fact, and the evidence contained in the application and supporting documents, and subject to the Conditions listed below, the Department CONCLUDES that the continued operation of the Skelton Hydro Project will result in all waters affected by the protect being suitable for all designated uses and meeting all other applicable water quality standards, provided that:

1. Water levels are maintained in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River;"

2. Scheduled maintenance drawdowns of the Skelton impoundment are limited as discussed in Section 8 of this order;

3. Minimum flows are provided in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River;"

4. Upstream and downstream fish passage is provided in accordance with the provisions of the "Saco River Fish Passage Agreement;"

5. A follow-up study is conducted to assure that dissolved oxygen concentrations in the river below the Skelton Dam are in compliance with applicable water quality standards;

6. A follow-up study is conducted to assure that the macroinvertebrate community immediately below the Skelton Dam is in compliance with applicable water quality standards;

7. Boulder clusters or equivalent structures are placed in the river below Skelton Dam to enhance salmon holding lies; and

8. Public recreational access and use facilities are maintained and developed as proposed.

THEREFORE, the Department GRANTS certification that there is a reasonable assurance that the continued operation of the SKELTON HYDRO PROJECT, as described above, will not violate applicable water quality standards, SUBJECT TO THE FOLLOWING CONDITIONS:

1. WATER LEVELS

A. The applicant shall maintain water levels at the Skelton Project in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) flashboard release or maintenance, (4) operating emergencies beyond the applicant's control, as defined below, or (5) agreement between the applicant and appropriate state and/or federal agencies, water levels in the project impoundment shall be maintained as follows:

- From April 1 through June 30 annually, no more than one foot below normal full pond elevation; and
- From July 1 through March 31 annually, no more than 4.0 feet below normal full pond elevation.

B. Operating emergencies beyond the applicant's control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and orders from local, state, or federal law enforcement or public safety authorities.

C. The applicant shall, in accordance with the schedule established in a new FERC license for the project, submit plans for providing and monitoring the water levels in the impoundment as required by Part A of this condition. These plans shall be reviewed by and must receive approval of the DEP Bureau of Land and Water Quality.

2. MAINTENANCE DRAWDOWNS

Scheduled maintenance drawdowns of the Skelton impoundment shall be limited to a total drawdown of 8.5 feet for a maximum of 48 hours once every three to four years as required to facilitate periodic debris removal at the Cataract Project turbine intakes and periodic maintenance of the Skelton Dam. Except as otherwise authorized by state fisheries agencies, scheduled maintenance drawdowns shall also be limited to the period from August 15 to October 15 when water temperatures do not exceed 20 degrees Celcius.

All required minimum flows shall be released from the Skelton Project during and following any scheduled maintenance drawdowns.

3. MINIMUM FLOWS

A. The applicant will provide flow releases from the Skelton Project in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) flashboard release or maintenance, (4) operating emergencies beyond the applicant's control, as defined below, or (5) agreement between the applicant and appropriate state and/or federal agencies, the following minimum flows shall be released from the project:

- From April 1 through June 30 annually, run-of-river operation, with outflow approximately equal to inflow, while allowing for up to a one foot drawdown of the impoundment;

- From July 1 through September 30 annually, am instantaneous minimum flow of 400 cfs, to be guaranteed by utilizing the top 4.0 feet of headpond storage as required to augment inflow. Whenever the impoundment has been drawn down by 4.0 feet, outflow will be reduced to 400 cfs or inflow, whichever is less;

- From October 1 through November 15 annually, or for such alternate six week period as may be mutually agreed to by the applicant and state and federal fisheries agencies, as described below, an instantaneous minimum flow of 600 cfs or inflow, whichever is less; and

- From November 16 through March 31 annually, an instantaneous minimum flow of 400 cfs, to be guaranteed by utilizing the top 4.0 feet of headpond storage as required to augment inflow. Whenever the impoundment has been drawn down by 4.0 feet, outflow will be reduced to 400 cfs or inflow, whichever is less.

B. Operating emergencies beyond the applicant's control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and orders from local, state, or federal law enforcement or public safety authorities.

C. As provided in the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," the start of the fall flow period may

be changed during any year by mutual agreement among the applicant, U.S. Fish and Wildlife Service, Department of Inland Fisheries and Wildlife, the Department of Marine Resources, and the Maine Atlantic Salmon Authority based on the following considerations: (1) expected flow and weather conditions; (2) biological factors such as fish migration or spawning periods; and/or (3) anticipated electrical need for or value of CMP's generation.

The fall flow period shall be no less and no more than six weeks, except upon mutual agreement among the parties listed above, and shall start no sooner than September 1 and no later than October 1. Any changes in the timing of the fall flow period will change the ending date of the summer flow period and the beginning date of the winter flow period accordingly for that year.

D. The applicant shall, in accordance with the schedule established in a new FERC license for the project, submit plans for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive approval of the DEP Bureau of Land and Water Quality.

4. FISH PASSAGE

The applicant shall provide fish passage at the Skelton Project in accordance with the provisions of the "Saco River Fish Passage Agreement." Specifically:

A. Downstream Fish Passage

The applicant shall construct permanent downstream fish passage facilities designed to pass Atlantic salmon, American shad, and alewife at the Skelton Project. These facilities shall be operational by May 1, 1998, or within three years of receipt of a new FERC license for the project, whichever occurs later.

B. Downstream Fish Passage Design Plans

The applicant shall, at least 60 days prior to the construction of downstream fish passage facilities required in Part A of this condition, submit final design and operational plans for these facilities, prepared in consultation with state and federal fisheries agencies. These plans shall be reviewed by and must receive approval of the fisheries agencies, the Department and FERC prior to construction of the facilities.

C. Upstream Fish Passage Facilities

The applicant shall construct new permanent upstream fish passage facilities, consisting of a fish lift or other suitable design with trap and truck facilities, designed to pass Atlantic salmon, American shad, and alewife at the Skelton Project. These facilities shall be operational by May 1, 1998, or within three years of receipt of a new FERC license for the project, whichever occurs later, and shall replace the existing pool and weir fishway.

Once the new Skelton fish passage facilities are operational and fish are present at the project in sufficient numbers, and upon the decision of appropriate state and federal fisheries agencies, the applicant shall fund the trapping and trucking of Atlantic salmon, American shad, and alewife at the Skelton Project. This will replace the current trapping and trucking of anadromous fish at the Cataract Project East Channel fish lift. All decisions on the number of fish to be trucked and the destinations of these fish will be made by the appropriate state and federal fisheries agencies.

D. Upstream Fish Passage Design Plans

The applicant shall, at least 60 days prior to the construction of the permanent upstream fish passage facilities required in Part C of this condition, submit final design and operational plans for these facilities, prepared in consultation with state and federal fisheries agencies. These plans shall be reviewed by and must receive approval of the fisheries agencies, the Department, and FERC prior to construction of the facilities.

E. Fish Passage Study

The applicant shall, in consultation with state and federal fisheries agencies, conduct a fish passage study or studies to determine the effectiveness of the upstream and downstream fish passage facilities required pursuant to Parts A & C of this condition.

F. Fish Passage Study Plan

The applicant shall, at least 60 days prior to the commencement of operation of the upstream and downstream fish passage facilities required by Parts A & C of this condition, submit a fish passage study plan or plans, prepared in consultation with state and federal fisheries agencies. These plans shall be reviewed by and must receive approval of the fisheries agencies, the Department, and FERC prior to its implementation.

G. Fish Passage Study Results

The applicant shall submit the results of any fish passage studies and any recommendations for changes in the design and/or operation of fish passage facilities to the consulting agencies and the Department within 6 months following completion of the study. The Department reserves the right, after notice and opportunity for hearing, to require reasonable changes in the design and/or operation of the fish passage facilities as may be deemed necessary to adequately pass anadromous fish (specifically, Atlantic salmon, American shad and river herring) through the project site. Any such changes must be approved by the Department and FERC prior to their implementation.

H. Salmon Restoration Efforts

In accordance with Paragraph 8 of the "Saco River Fish Passage Agreement," all parties to the Agreement will use their best efforts

to expedite such agreements as are necessary for restoring Atlantic salmon to the New Hampshire portion of the Saco River basin.

5. DISSOLVED OXYGEN STUDY

A. The applicant shall, in accordance with the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," and in consultation with the DEP, conduct a study to determine whether dissolved oxygen concentrations in the Saco River immediately below the Skelton Project are in compliance with applicable water quality standards following the implementation of the minimum flow requirements of this certification. The applicant shall submit the details of a study plan within one year of the issuance of a new FERC license for the Skelton Project. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

B. The results of the dissolved oxygen study shall be submitted to the Department in accordance with the schedule established in the study plan. After reviewing the study results and comments from the applicant, and after notice and opportunity for hearing, the Department may order such modification of project facilities and/or operation, including but not limited to increasing the minimum flows established in this certification, as may be deemed necessary to meet meet applicable dissolved oxygen standards in the Saco River immediately below the Skelton Project.

6. MACROINVERTEBRATE STUDY

A. The applicant shall, in accordance with the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," and in consultation with the DEP, conduct a study to determine whether the macroinvertebrate community in the Saco River immediately below the Skelton Project is meeting applicable aquatic life standards following the implementation of the minimum flow requirements of this certification. The applicant shall submit the details of a study plan within one year of the issuance of a new FERC license for the Skelton Project. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

B. The results of the macroinvertebrate study shall be submitted to the Department in accordance with the schedule established in the study plan. After reviewing the study results and comments from the applicant, and after notice and opportunity for hearing, the Department may order such modification of the minimum flows established in this certification as may be deemed necessary to meet applicable aquatic life standards in the Saco River immediately below the Skelton Project, in accordance with established biological assessment criteria.

7. SALMON HABITAT ENHANCEMENT

A. The applicant shall, in consultation with appropriate state and federal fisheries agencies, install boulder clusters or equivalent structures in the river below the Skelton Dam to enhance salmon holding lies.